MILAN KUCHAŘÍK

August 14, 2007

Basic Information:

Address: T-7 Group, MS B284
Los Alamos National Laboratory
PO Box 1663
Los Alamos, NM 87545, U.S.A

Phone: 1 (505) 667-2188

Fax: 1 (505) 665-5757

E-mail: kucharik@lanl.gov

Education:

Mar. 2002–May 2006 PhD study in Physics at the Department of Physical Electronics, Faculty of Nuclear Sciences and Physical Engineering, Czech Technical University in Prague. Thesis title: "Arbitrary Lagrangian-Eulerian (ALE) Methods in Plasma Physics".

Sep. 1996–Feb. 2002 Master study in Computational Physics at the Department of Physical Electronics, Faculty of Nuclear Sciences and Physical Engineering, Czech Technical University in Prague. Thesis title: "Difference Schemes for Conservation Laws in 3D".

Jan. 2000–May 2000 One semester study at the Department of Mathematics and Statistics of the University of New Mexico, Albuquerque (NM), USA.

Employment History:

Since Jul. 2006 Postdoc in Mathematical Modeling and Analysis Group (T-7) of the Los Alamos National Laboratory, Los Alamos (NM), USA.

May 2005–Jul. 2005 Graduate Research Assistant in the Los Alamos National Laboratory, Los Alamos (NM), USA.

Jan. 2005–Jul. 2006 Technical staff member of the Czech Technical University in Prague, Faculty of Nuclear Sciences and Physical Engineering.

May 2003–Aug. 2003 Graduate Research Assistant in the Los Alamos National Laboratory, Los Alamos (NM), USA.

May 2002–Aug. 2002 Graduate Research Assistant in the Los Alamos National Laboratory, Los Alamos (NM), USA.

Other Activities:

Summer semester 2004 Teaching the course "Numerical Methods" at Czech Technical University.

2002–2006 Teaching the course "Practical Informatics" at Czech Technical University.

2001–2006 Administration of the UNIX network at the department.

Professional Interests:

- Interests in Computational Physics, Applied Mathematics, Conservation Laws, solving PDEs in multiple dimensions.
- Development and analysis of 3D difference schemes and their applications in gas dynamics and plasma physics.
- Development of Arbitrary Lagrangian-Eulerian (ALE) methods for gas dynamics and plasma physics.
- Conservative interpolations of functions, applications in the context of ALE methods.
- Multimaterial Lagrangian models and remapping algorithms for multimaterial ALE code.
- Mesh smoothing techniques for ALE methods.
- Simulations of interactions of intense laser beam with massive or flyer targets, high speed impact simulations.

Recent Publications:

[1] R. Garimella, M. Kuchařík, and M. Shashkov. An efficient linearity and bound preserving conservative interpolation (remapping) on polyhedral meshes. *Computers & Fluids*, 36(2):224–237, 2007.

[2] M. Kuchařík, R. Liska, S. Steinberg, and B. Wendroff. Optimally-stable second-order accurate difference schemes for nonlinear conservation laws in 3D. *Applied Numerical Mathematics*, 56(5):589–607, 2006.

[3] M. Kuchařík, J. Limpouch, and R. Liska. Cylindrical 2D ALE simulations of laser interactions with flyer targets. *Czechoslovak Journal of Physics*, 56:B522–B527, 2006.

[4] T. Kapin, M. Kuchařík, J. Limpouch, and R. Liska. Hydrodynamic simulations of laser interactions with low-density foams. *Czechoslovak Journal of Physics*, 56:B493–B499, 2006.

[5] M. Kuchařík, J. Limpouch, and R. Liska. Laser plasma simulations by arbitrary Lagrangian Eulerian method. *J. de Physique IV*, 133:167–169, 2006.